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THE NEW PSYCHOLOGY.^[1]

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TO give readers some idea of the contents of a good book is very often the most useful thing a reviewer can do. Unfortunately, that course is not open to us in the present instance. The subject is too vast. We cannot exhibit the grandeur; we can only in a few general phrases express our admiration of the profound, all-embracing philosophy of which the work before us is an installment. The doctrine of evolution, when taken up by Mr. Spencer, was little more than a crochet. He has made it the idea of the age. In its presence other systems of philosophy are hushed; they cease their strife, and become its servants, while all the sciences do it homage. The place that the doctrine of evolution has secured in the minds of those who think for the educated public may be indicated by a few names taken just as they occur. Mr. Darwin's works, the novels of George Eliot, Mr. Tylor's "Primitive Culture," Dr. Bastian's "Beginnings of Life," and Mr. Bagehot's "Physics and Politics," have hardly anything in common but the idea of evolution, with which they are all more or less imbued. In a word, we have but one other thinker with whom, in point of influence on the higher thought of this, and probably of several succeeding generations, Mr. Spencer can be classed; it does not need saying that that other is Mr. J. S. Mill.

As we cannot present such an outline of Mr. Spencer's system of psychology as would make it generally intelligible, the purpose of directing attention to the work will perhaps be best served by selecting as the subject of remark one or two points to which the presence of the controversial element may lend a special interest. After pointing out that the cardinal fact brought to light, when nervous action is looked at entirely from the objective point of view, is, that the amount and heterogeneity of motion exhibited by the various living creatures are greater or less in proportion to the development of the nervous system, Mr. Spencer comes to the vexed question of the relation between nervous phenomena and the phenomena of consciousness. This is a subject about which, in its more subtle aspects, there is much uncertainty and some confusion of thought. It may be taken as established, that every mode of consciousness is a concomitant of some nervous change. Given certain physical conditions, accompanied by a special state of consciousness, and there is every reason to believe that physical conditions in every respect identical will always be attended by a similar state of consciousness. This, and not more than this, we think, was intended by Mr. Spencer in his chapter on *Æstho-physiology*. Nevertheless, several able men have, it would appear, been led to suppose that he countenances a kind of materialism (not using the word to imply any thing objectionable; for why not be materialists, if materialism be truth?), which forms no part of his philosophy. To give precision and emphasis to what we say, we would take the liberty to refer to the position taken up by Dr. Bastian in his remarkably able and important work on the "Beginnings of Life." The expression that

definitely raises the issue of which we wish to speak, and which at the same time fixes Dr. Bastian to a view not in harmony with the teaching of Mr. Spencer, is the following: "We have not yet been able to show that there is evolved, during brain action, an amount of heat, or other mode of physical energy, less than there would have been had not the Sensations been felt and the Thoughts thought;" but he believes that this is the case. Our present object is not so much to show that here speculation has got on the wrong track, as that, if we understand Mr. Spencer, it is not his opinion that any thing of this kind takes place; though certainly some ambiguous phrases might be held to convey this meaning. We have mentioned the significant fact that the size of the nervous system holds a pretty constant relation to the amount and heterogeneity of motion generated. The implication is, that none of the motion evolved during nervous action disappears from the object world, passes into consciousness in the same sense that physicists speak of momentum passing into heat; that whether consciousness arise or not, there will be for the molecular motion set up in the nerve-substance exactly the same mechanical equivalents. Whether, for example, those ganglia that in the body of each one of us are employed in carrying on what we call reflex action, are so many distinct seats of consciousness, like so many separate animals, an idea for which much has been said, or whether the nerve-changes that go on in these ganglia have no subjective side; in either case the objective facts will remain the same. If consciousness is evolved, it is not at the expense of a single oscillation of a molecule disappearing from the object-world. No doubt it is hard to conceive consciousness arising in this apparently self-created way; but, if any suppose that by using phrases that would assimilate mind to motion they ease the difficulty, they but delude themselves. It is as easy to think of consciousness arising out of nothing, if they will, as to conceive it as manufactured out of motion; that is to say, the one and the other proposition are alike absolutely unthinkable. On this point Mr. Spencer writes: "Can we think of the subjective and objective activities as the same? Can the oscillations of a molecule be presented in consciousness side by side with a nervous shock, and the two be recognized as one? No effort enables us to assimilate them. That a unit of feeling: has nothing in common with a unit of motion, becomes more than ever manifest when we bring the two into juxtaposition." Mr. Spencer's idea is that feeling and nervous action are two faces of the same ontological something—a view that prohibits the notion of the one passing into or being expended in producing the other. The conclusion is, that the transformations of physical energy remain unaffected by the presence or absence of consciousness.

Psychology has as yet been made a serious study by only a few individuals. Accordingly, it is only the more striking and easily grasped peculiarities of Mr. Spencer's system that can be referred to with advantage. Of these, the most imposing, and the one of which the educated public have already a slight second-hand acquaintance, is the doctrine that the brain and nervous system is an organized register of the experiences of past generations, that consequently the intelligence and character of individuals and of races depend much more on this, on the experiences of their ancestors, than on their individual experiences. The flood of light thrown by this conception on so many things previously dark and unfathomable, its power of bringing about harmony where before there was nothing but confusion and unsatisfactory wrangling, ought to have been sufficient to have secured it a universally favorable reception. This, however, has not been the case, and partly, perhaps, because of the very merits that recommend it. It may be that veterans who have won their laurels on, say, the battle-field of innate ideas, love the old controversy, and are not anxious to learn that both sides were right and both wrong. Moreover, it is the misfortune of this important addition to psychology, that it shows that previous workers in this field of inquiry have at times been laboring in the dark to solve problems like in kind with the famous difficulty of accounting for the supposed fact that the weight of a vessel of

water is not increased by the addition of a live fish. For instance, should Mr. Spencer be right, the celebrated theory of the Will, elaborated by Prof. Bain, the able representative of the individual-experience psychology, becomes a highly-ingenious account of what does not happen. Thus, the new doctrine can be accepted only at the expense of giving up much of what has hitherto passed for mental science.

The following sentences will serve to indicate Mr. Spencer's position: "The ability to coördinate impressions, and to perform the appropriate actions, always implies the preëxistence of certain nerves arranged in a certain way. What is the meaning of the human brain? It is that the many *established* relations among its parts stand for so many *established* relations among the psychical changes. Each of the constant connections among the fibres of the cerebral masses answers to some constant connection of phenomena in the experiences of the race. . . . Those who contend that knowledge results wholly from the experiences of the individual, ignoring as they do the mental evolution which accompanies the autogenous development of the nervous system, fall into an error as great as if they were to ascribe all bodily growth and structure to exercise, forgetting the innate tendency to assume the adult form. . . . The doctrine that all the desires, all the sentiments, are generated by the experiences of the individual, is so glaringly at variance with facts, that I cannot but wonder how any one should ever have entertained it." The circumstances which account for the existence of the individual-experience psychology, and which enable it still to hold out as a rival of the more advanced form that Mr. Spencer has given to the science, are these: (1) the immaturity of the human infant at birth; (2) the lack of precise knowledge with regard to the mental peculiarities of the lower animals; (3) the still popular notion that the human mind does not resemble the mental constitution of the animals; that it is of a different order. Of course this last is nowadays little more than a popular superstition, nevertheless it can be taken advantage of: and an argument to the effect that the mental operations of the animals are, to all appearance, so very different from the workings of the human mind that they can supply nothing more than a worthless, if not a misleading analogy, has a very specious and scientific look about it in the eyes of those who are not very well acquainted with the subject. Our ignorance of animal psychology may be still more boldly drawn on in defence of the theory under consideration. With a hyper-scientific caution, its advocates refuse to take into account any thing (incompatible with their theory) concerning any one species of animal that has not been proved by a very overwhelmingly large number of very accurate observations. And they find it possible to maintain that it still remains unproved that any species of animal possesses either knowledge or skill not wholly acquired by each individual. A better acquaintance with the mental peculiarities of the animals is certainly a desideratum, and we hope that this rich field of investigation will not long remain uncultivated. In *Macmillan's Magazine* for February there is an account of a series of observations and experiments on young animals by the present writer, which, unless they can be discredited, may reasonably be expected to go far to establish the fact of instinct, the fact of innate knowledge and unacquired skill; in other words, the phenomena on which the experience-psychology, minus the doctrine of inheritance, can throw no light whatever. Now, had not Mr. Darwin banished from every scientific mind the hypothesis of the miraculous creation of each distinct species of animal just as we see it, with all its strange organs, and, to most people, still stranger instincts, the presumption against a system of human psychology that not only can give no account of the most striking phenomena in the mental life of the animals, but which strongly inclines those who hold it to pronounce such phenomena incredible, might not have been so apparent. But, in the present state of our scientific knowledge, such a psychology, professing to be a complete system, is self-condemned. In its fundamental principles the science of mind must be the same for all living creatures. Further, if man be, as is now believed, but the highest, the last, the most complex product of evolution,

a system professing to be an analysis and exposition of his mind, yet confessing itself incompetent to deal with the necessarily simpler mental processes of lower creatures, must surely feel itself in an uncomfortably anomalous position.

It is, however, on the first-mentioned circumstance, the immaturity of the infant at birth, that most stress can be laid. The newly-born babe cannot raise its hand to its mouth, and doubtless for a long time after birth it has no consciousness of the axiom, "Things that are equal to the same thing are equal to one another." The helplessness of infancy is pointed to as furnishing ocular demonstration of the doctrine that, whatever may be the case with the animals, all human knowledge, all human ability to perform useful actions, must be wholly the result of associations formed in the life-history of each individual. But it can surely require little argument to show that this is an entirely unwarranted assumption. It might as well be maintained that, because a child is born without teeth and without hair, the subsequent appearance of these must be referred wholly to the operation of external forces. Of the several lines of argument that might here be employed, let us, for the sake of freshness, take the analogy from the lower animals. We are not aware that it can be asserted, as the result of prearranged and careful observations, that any creature at the instant of birth exhibits any of the higher instincts. A number of isolated and more or less accidental observations have been recorded; and apparently on the strength of these Mr. Spencer has made the following unqualified statement. "A chick, immediately it comes out of the egg, not only balances itself and runs about, but picks up fragments of food, thus showing us that it can adjust its muscular movements in a way appropriate for grasping an object in a position that is accurately perceived." The fact is, that, on emerging from the shell, the chick can no more do any thing of all this than can the new-born child run about and gather blackberries. But between the two there is this great difference, that, whereas the chick can pick about perfectly in less than twenty-four hours, the child is not similarly master of its movements in as many months. Our present point is, that it can be shown by experiment that the performances of the chick a day old, which involve the perceptions of distance and direction by the eye and the ear, and of many other qualities of external things, are not in any degree the results of its individual experiences. Let it now be remembered that, in the absence of conclusive evidence to the contrary, it has been considered a safe position to hold that the early knowledge and intelligent action of the chicken "may be, after all, nothing more than very rapid acquisitions, the result of that experimentation, prompted by the inborn or spontaneous activity." May we now, on the other side, similarly presume, until the contrary is shown, that the more tardy progress of the infant is not because its mental constitution has to be built up from the foundation out of the primitive elements of consciousness, which the chicken's has not, but rather because the child comes into the world in a state of greater physical, and therefore mental immaturity? The progress of the infant, however, has been so continually spoken of as if it were a visible process of unaided acquisition, that it may give some surprise when it is asserted from the other side that we have no sufficiently accurate acquaintance with the alleged acquisitions of infancy to justify the doctrine that they are different in kind from the unfolding of the inherited instincts of the chicken. To give definiteness to the attitude taken up, we would say, for example, that the facts concerning the early movements of the two lambs and the calf observed by Prof. Bain, and which, looked at from his point of view, were strong confirmation of the doctrine of individual acquisition, may be just as readily interpreted as the unfolding of inherited powers; which, as far as we know, start into perfect action at the moment of birth, in no single instance. From observations on several newly-dropped calves, the facts corresponding substantially with those recorded by Prof. Bain, the present writer could draw no conclusive evidence in favor of either the one theory or the other. One observation, however, may here be mentioned that seemed rather to favor the doctrine of inheritance. A calf one hour old, which had been staggering about on its legs for ten

minutes, stepped out at the open door of the byre. It no sooner found itself in the open air than it began to frisk and dance; it was left entirely to itself, and, when it had been on its legs fifteen minutes, it—apparently in obedience to the feeling of fatigue deliberately lay down, folding in its limbs after the established manner of its kind. This is all we know about calves; about children we know nothing at all. And it may fairly be asked how, when called in question, the assumption that underlies such statements as the following can be made good. We quote from Prof. Bain's account of the growth of voluntary power. He says: "The infant is unable to masticate; a morsel put into its mouth at first usually tumbles out. But, if there occur spontaneous movements of the tongue, mouth, or jaw, giving birth to a strong relish, these movements are sustained, and begin to be associated with the sensations; so that, after a time, there grows up a firm connection." Bearing in mind that, when born, the child has no occasion for the power of masticating solid food; that the ability to suck, which involves an equally complex series of muscular adjustments, is what it requires, and this it has by instinct; bearing all this in mind, the question is, Why may not the innate ability to masticate be developed by the time it is required quite as spontaneously as the teeth used in the operation? Take a parallel. The feeble nestling when it leaves the shell is blind. One of the several very pronounced and interesting instincts it exhibits at this stage is, that in response to certain sounds it opens its mouth and struggles to hold up its head to be fed. Several weeks later it begins to pick for itself. Now, we put the question, Is this second mode of filling its stomach to be considered a pure acquisition, while its original plan must certainly be regarded as pure instinct? No one, we think, will venture to answer in the affirmative; the more so as this is a case that may any day be put to the test of experiment. Where, then, is the evidence that the analogous progress from drawing milk to masticating solid food is of a different kind?—*Nature*.



1. "The Principles of Psychology." In two volumes. By Herbert Spencer. New York: D. Appleton & Co.

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